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ABSTRACT

This guide is designed to assist unions, companies, and educational providers in analyzing the educational needs of workers and employers and in developing effective workplace literacy and workplace education programs to meet those needs. It is based on the success of Project ELI (Education, Labor, and Industry). An introduction defines terms. Section 1 addresses the need for workplace education. Section 2 discusses preliminary planning: establishing the joint committee and initial planning group; developing worker, union, and management goals; seeking funding sources; role of educational providers; and formulating a plan. Sections 3 and 4 focus on the roles of the joint committee and peer counselors. Section 5 considers the needs assessment. Section 6 discusses funding sources. Steps in developing the educational plan are described in section 7: formulating a statement of program goals and needs, using workplace-based curricula, choosing the teaching staff, and job-linked learning. Section 8 focuses on creating the learning environment. Section 9 addresses marketing and managing the program, including confidentiality and recordkeeping; initial interviews, testing, and assessment; and exit evaluations. The focus of section 10 is on tracking program progress: interpreting statistical measures, informal program monitoring, and testing. Section 11 describes developing worker-centered curriculum for both specific and basic skills. The conclusion highlights roles, basic principles, and procedures. Appendixes include sample needs assessment questions and program participation statistics. (YLB)

Building Effective Workplace Literacy and Education Programs

Lessons from **PROJECT ELI**



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**A partnership effort dedicated to
upgrading millworkers' skills for the future**

Administered by Montana State AFL-CIO
in conjunction with
Flathead Valley Community College, Lincoln County Campus
Lumber, Production and Industrial Workers Union, Local 2581
Champion International Corporation, Libby Complex

PROJECT ELI

AN IMPLEMENTATION GUIDE FOR A WORKPLACE LITERACY PROGRAM

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Introduction

The Purpose of This Guide

In the changing world and national economy, with an increased emphasis on competitiveness, workplace literacy and education will be a major issue on the public agenda as workers and companies prepare for the 21st century. Surviving the workplace revolution will require that workers continually increase their skill levels. These skills will include workplace literacy, basic skills upgrading, computer literacy, statistical analysis, interpersonal communication and worker involvement in the organization of work.

The involvement of both labor and management in the education process will be critical to the success of these efforts. Too often the role of labor and the workforce in developing educational programs is overlooked. Workers have a level of knowledge about production and the workplace that is essential in developing education strategies. We believe that the more a program is built on the knowledge and full participation of workers, the more effective it will be. An active labor-management partnership is the key to success.

The purpose of this guide is to assist unions, companies and educational providers in analyzing the educational needs of workers and employers and in developing effective workplace literacy and workplace education programs to meet those needs. Based on the success of Project ELI, this guide will outline important concepts and practical steps to help your organization meet current and future education and training needs. It will provide:

- a description of a successful joint labor-management partnership model
- methods for developing an effective workplace education program
- recruitment and retention strategies
- procedures for developing site-specific work-based curriculum
- sample forms and systems for tracking and evaluating programs.

This guide will **not** describe the ideal program for **all** situations. One of the key ingredients to Project ELI's success was tailoring the program to fit the particular, and constantly changing, needs of the workforce and the employer. Building the capacity for flexibility into a workplace education program is one of the most important elements in program success.

What is Project ELI?

Planning for Project ELI (Education, Labor and Industry) began in 1989 when the Montana State AFL-CIO, Local 2581 of the Lumber, Production and Industrial Workers Union, Champion International Corporation, and Flathead Valley Community College agreed to form a partnership to develop a workplace education program and seek federal funding for an eighteen month demonstration project. The goal of the project was to help prevent the unemployment and under-employment of employees because of increased demands for literacy in the changing workplace. ELI's workplace literacy and education programs were designed to increase both

basic and job-specific skills, and to enhance workers' ability to compete and advance in a rapidly changing economy and workplace. The information in this guide is based on the experience gained in developing and implementing this program.

Project ELI is based at the Champion International mill complex in Libby, Montana. The project was designed to bridge the gap between the relatively low level skills required to operate existing mill machinery and the much higher skill levels needed to monitor and operate the state-of-the-art computer-controlled equipment that was being planned. Champion International, Montana State AFL-CIO and the local union were all vitally concerned with improving workers' skills and plant productivity so that the workforce and the company could remain competitive. By addressing the educational needs of the workplace, jobs would be retained and workers would be able to advance in the changing work environment. With the help of local educational providers, labor and management collaborated to meet the challenge.

Project ELI provided educational services in four areas:

- individual basic education instruction in reading, language and math
- individual preparation for GED testing
- skill development classes
- workshops

Courses developed in the program included:

- math for hydraulics
- calculator math
- reading comprehension for welding
- reading comprehension for boiler licensing
- production statistics
- written communication skills in the workplace
- oral communication skills in the workplace
- worker involvement training

The program also provided support services including:

- academic counseling
- peer counseling
- professional counseling

Terms used in this guide

In developing workplace literacy and education programs, it is essential that everyone involved have a common understanding of the terms that are used. The following list of terms will be useful to anyone involved in developing a workplace literacy and education program.

Basic skills: Basic skills are the reading, math and language arts skills which are necessary for all individuals to function competently and effectively in the workplace and in society.

Curriculum: The courses of study offered by an educational or training program.

Daily/weekly log sheet: A record of the educational progress of and the time spent with each individual student enrolled in the basic skills program or GED program. It is maintained by the instructor.

Data: Quantitative information about a program including cost, time, participation and results.

Developmental skills: Developmental skills are basic educational principles taught in a sequential format with emphasis on application.

Evaluation: A method of determining the effectiveness of an educational or training program.

Exit evaluation: A form filled out by a participant at the conclusion of a course of study. It is used as a tool to evaluate the course of study, the teacher, and materials used.

Feedback: Information given back to the educational partners concerning the effectiveness of the program.

Functional illiteracy: Functional illiteracy is the inability to understand workplace materials in order to carry out work assignments properly.

GED: The initials stand for General Educational Development. It is accepted in lieu of a high school diploma by most institutions of higher learning and by employers.

General literacy: General literacy is usually defined as the ability to read and comprehend all kinds of reading material, regardless of subject matter.

Goal statement: A statement formulated cooperatively between a worker and instructor outlining the worker's educational or training objectives.

Illiteracy: Illiteracy is the inability of a person to read or write, including the inability to read, write, or solve basic mathematical problems at a level needed to function in modern society.

JLLP: Job Linked Literacy Programs. It links the literacy program directly to the workplace.

Joint committee: The Joint Committee is composed of an equal number of labor, management and education personnel. Representatives from the administering agency are also included.

Literacy: Literacy is an individual's ability to read, write, and perform basic math operations at a level of proficiency necessary to function on the job and in modern society.

Needs assessment: The needs assessment is the interview process used to gather initial information on a prospective participant's education and training needs.

Objectives: Objectives are intermediate steps that need to be defined and then successfully mastered in order to achieve a goal. Objectives usually indicate methods, materials, requirements and levels of mastery necessary to obtain the goal.

Participatory learning: Participatory learning is the involvement of the learner in the design of an educational or training program and in the methods used in the classroom.

Peer counselor: A peer counselor is a trained program advocate who recruits participants and provides feedback about program effectiveness. Peer counselors also help participants overcome barriers to participation including fear and lack of confidence

Registration sheet: The registration sheet is used to record the general information obtained from a potential participant.

Special literacy: Special literacy is the ability to understand specific areas of content. Special literacy enables readers to understand material on a subject that they are knowledgeable about.

Specific skills: Specific skills are those skills that are required to do a specific job or work task.

Stakeholders: Stakeholders are those groups and individuals who have a "stake" in an educational program. In workplace education programs stakeholders include workers, the company, the union, educational providers and program administrators.

Statistics: Statistics are the collection, organization, and interpretation of data pertinent to the evaluation of the program.

US Department of Education: The government agency in charge of administering and coordinating federal education programs, including Workplace Education.

US Department of Labor: The government agency in charge of administering and enforcing laws designed to advance the public interest by promoting the welfare of U. S. wage earners, improving their working conditions, and advancing their opportunities for employment.

Worker-centered programs: Worker centered programs are programs that are developed around workers' knowledge, ability and needs.

Workplace literacy: Workplace literacy is instruction in basic math, reading, and language arts based on workplace-specific curricula.

The Need for Workplace Education

The Scope of the Problem

In the last five years the impact of illiteracy and functional illiteracy on U.S. workers and companies has been widely reported and documented. While researchers don't agree on the definition or the number of illiterate adults in the U.S. (estimates range from 4 million to 27 million to 60 million), there is agreement that the skill level of American workers is a serious problem that must be addressed to protect jobs and business competitiveness.

The 1991 Skills Gap Survey conducted by the National Association of Manufacturers (NAM) stated that more than half of the responding companies reported "serious deficiencies in basic math, reading and problem-solving skills" in the workforce. Some manufacturers reported rejecting five out of six applicants because of basic skills inadequacy. The U.S. Department of Education reports that 1 in 5 adults are functionally illiterate and the Work in America Institute states that 20 percent of adults between the ages of 21 and 25 cannot read beyond an eighth-grade level - at a time when 75% of all jobs require reading at the 9th to 12th grade level.

Defining literacy

When a Japanese parliamentary leader said that American workers are "lazy and illiterate", his contention might have found its roots in a quote from the National Literacy Act of 1991. That document states, "Congress finds that nearly 30,000,000 adults in the United States have serious problems with literacy." The National Literacy Act defines literacy as, "an individual's ability to read, write, and speak in English, and compute and solve problems at levels of proficiency necessary to function on the job and in society, to achieve one's goals and develop one's knowledge and potential." This official definition of literacy does little to remove the existing confusion.

It is important to clarify the difference between *basic literacy*, the ability to read and write, and *functional literacy*, the ability to read, write and communicate at the level necessary to function fully on the job and in the society. A worker may be a high school graduate and be able to read and write at the ninth-grade level and still be 'functionally illiterate' if they are unable to understand materials or directions required in the workplace.

There is also a difference between *general literacy* and *special literacy*. General literacy is defined as the ability to read all kinds of written material, regardless of subject matter. Special literacy is defined as the ability to understand specific areas of content. Special literacy is important in workplace education because it can be an effective approach to raising general literacy levels. This is true because it is easier for learners to comprehend material on subjects they are familiar with. This approach also addresses the specific needs of employers for their employees to be able to read manuals and other work-based materials.

Rethinking education and training

The final solution to the problems of literacy in America will require changes throughout the educational system, from schools and training institutions to the workplace itself. Many educators believe that the only growth areas for educational programs in the next two decades will be in adult and continuing education. The need is not only for increased opportunities, but also for an improved method of linking learners to new and existing options and making those options more effective. Workplace literacy and education programs address all of these needs.

The need for increasing the skill levels of U.S. workers is illustrated by U.S. Department of Labor (DOL) projections which indicate a trend toward job growth among occupational groups with higher skill levels. DOL predicts that 41 percent of the increase in jobs between 1990 and 2005 will come in three areas: 1) executive, administrative and managerial occupations; 2) professional specialties; and 3) technicians and related support personnel. The current workforce must be trained to fill these new jobs.

Historically, employers have placed the responsibility for the poor preparation of workers outside the workplace, blaming it on the failure of the schools, the deterioration of the family unit, and the failure of workers themselves. While federal funds have encouraged the development of workplace literacy programs, the commitment of corporate funds to basic skills training and skills upgrading at the workplace has been minimal. As recently as 1990, 90% of the money spent for training in the U.S. was spent on training supervisory and management personnel. According to the American Society for Training and Development (ASTD), only one employee in 10 receives formal training from his or her employer.

This situation has begun to change. As new work systems flatten organizational charts and place more production decisions in the hands of front-line workers, there has been a recognition of the need to allocate funds to train the workforce at the workplace. New technology and new work methods will require a new approach to training that sees it as an on-going part of the work process. The traditional areas of training will also have to be expanded as new conditions also require new communication and interpersonal skills so that workers can work in team and participative management settings.

From the workers' point of view, this training is doubly important because current trends show that lifetime employment with one employer will be increasingly rare and most workers will have multiple jobs and careers. Additional education and training will be necessary to create the kind of flexibility and transferable skills that will be demanded in the workplace. The needs of workers and employers coincide in facing this new world of work.

Projections for Montana

The Montana Department of Labor and Industry projects that workers in occupations expected to show declines in jobs through 1997 are currently employed in manufacturing and railroad jobs. In its 1992-93 Planning Report, the department said, "Workers in the four occupations expected to lose the most jobs through 1997 are almost exclusively employed in Montana's lumber and wood products industry: machine feeders and off-bearers, sawing machine operators/tenders,

logging tractor operators, and fallers and buckers." The U.S. Department of Labor indicates that most of the fastest growing occupations will require a workforce with higher levels of education.

The U.S. Census Bureau reported that there were 507,851 adults, 25 years and over, in Montana in 1990. Of those, 9% had less than a ninth-grade education and an additional 11% had attended high school without graduating. Of the adult population, 33% reported high school graduation as their highest level of education. This means that over half the adults in the state have not had post-secondary education, a requirement for many of the new jobs being created. An additional 22% of the adult population has had some college training, but had not graduated from a post-secondary program. Of those completing college programs, 5.5% received Associate of Arts degrees, 22% Bachelor of Arts degree and 5.5% advanced degrees. While Montana has many skilled and qualified workers, the need to provide additional training and education for its workforce is clear.

Using Newly Acquired Skills

Workers today need modern problem-solving and critical thinking skills that weren't necessary in the past. One Champion employee, a lead mechanic, couldn't read, but he had been fooling his co-workers for years. He would look at pictures and diagrams in the manual and solve problems based on his years of experience and by finding a broken part and fixing it without analyzing the problem critically. Through Project ELI, this employee has learned to read and now is a member of the Central Maintenance Department safety team. His confidence has been boosted, his participation in his department has increased and he has proposed ways to improve maintenance and cut waste in the plant.



Preliminary Planning

The success of a workplace education program begins with the planning and development process and the building of the partnership and the involvement of all stakeholders. Project ELI took place in a unionized workplace, and the union played a key role in the development and implementation of the program. In non-unionized workplaces, some organizational body of workers will need to function in the role that the union played in Project ELI. An effective program requires a method of getting worker input into the development process and worker feedback to evaluate program success and make suggestions for change that will improve the program. This participatory approach to program development and implementation was one of the keys to the success of Project ELI. This section will discuss: 1) establishing the partnership; 2) developing worker, union and management goals; 3) seeking funding sources; 4) the role of educational providers; and 5) formulating a plan

Developing the Joint Committee

The first step in creating an effective program is to bring the primary stakeholders together to establish their commitment to the workplace literacy and education project and to define their roles. After preliminary meetings determined that there was mutual interest in developing a program, it was agreed that the partnership would pursue funding through a Department of Education (DOE) Workplace Education Grant. A joint committee was established (formally called the Partnership Council) and the following initial roles were established for the primary stakeholders:

Montana State AFL-CIO. The Montana State AFL-CIO agreed to take leadership in developing the program, to coordinate the establishment of the joint committee, and to administer the program.

Lumber, Production, and Industrial Workers Union Local 2581. The local union agreed to provide peer counselors, recruit participants and to ensure the confidentiality of student records, including tests and any other data that might be collected in individual and classroom settings.

Champion International. Champion International agreed to provide the workers, the space for the program and to ensure that the environment was non-threatening so employees would feel comfortable in taking time to participate, learn and upgrade their skills. Workers were assured that they would not lose anything, including pay, if they participated in the program.

Flathead Valley Community College. The college agreed to be the educational contractor and to provide teachers to the program. They also agreed, in conjunction with representatives from labor and management, to participate in the process of developing work-based curriculum.

The initial planning group

As in planning other kinds of joint programs, it is necessary to designate a planning group or task force to do a needs assessment and determine what kind of workplace literacy and education program would be appropriate. Members of this group are likely to become members of the Joint Council which will serve as the program's governing board. For this reason it is important to include union leaders and representatives from management. This planning effort should be linked to any related education or training activities that the union or the company are engaged in. One or more of the union's principal officers, along with company representatives, should assume leadership in the planning process to ensure that a sound program is established that will enjoy broad support.

Overcoming Scheduling Problems

Timing is everything, especially in workplace education. Normal community college hours and schedules, with classes offered from 8 a.m. to 9 p.m. for a fifteen week period, just wouldn't work with Project ELI. Employees at Champion work different shifts, and some alternate shifts with varying time schedules. Champion, meanwhile, has a set production schedule, and relied on workers being at their jobs to meet those schedules.

Scheduling classes was a major problem. A 9 to 5 schedule would have prevented many workers from participating because of shifts and family responsibilities. All parties have, within reason, had to adjust to the workers' schedules and to production needs. After a reduction in force, it was more difficult for Champion to allow workers to attend classes during work hours. The union was flexible, and eventually training and class schedules were altered to satisfy as many people as possible. Teachers were available on site from 6 a.m. to 8 p.m. to accommodate the needs for one-on-one and small group instruction. Establishing education schedules that revolve around workers' schedules, but don't hurt production and can be maintained by teachers, is a challenge. However, the success of the program often depends on meeting this challenge.

An inventory of management staff and union members with special capabilities or knowledge should be taken. The literacy program issue might spark the interest of workers that have previously been inactive in education programs. Union representatives and management personnel will be valuable planning resources and it is important to contact them at an early stage of your planning. It is also a good idea to establish a community network early in the program that encompasses any local educational entities, city and county libraries, and other supportive services. These may be a future source of teaching and supporting staff.

The Joint Committee

Importance of the Joint Committee

The Joint Committee must be a forum where members can openly and freely express opinions, voice needs, and find solutions to their concerns about the education program. The effectiveness of the Joint Committee in working together in the planning stages of the program will have a direct impact on the eventual success of the program. As the program is actually implemented, the ability of the Joint Council to respond to changing needs and situations will depend on the working relationships established early in the process. Each partner must understand its role in the entire program, and must understand that no one party has full responsibility or veto power. Consensus should always be the goal.

A successful program will provide access to as many ideas and resources as possible. The Joint Committee is the place where these ideas and resources will be shaped into an actual program. The direction of the program will come from the Joint Council, but it is critically important that there are mechanisms to get input from everyone involved in the program, including the workers who will be the actual "consumers" of the program. Decisions should be firmly grounded in their learning needs and experiences. The "bottom-up" input into the decision making process established in the planning stage should continue as the program is implemented.

If an existing labor-management structure exists, it can provide a foundation for joint planning. This group could serve as the core group for the initial planning and serve as the governing body throughout its operation. The core of an effective labor-management team may consist of the union business agent, union officers, management personnel, the project director, a representative from the administering unit, and a representative from the educational provider.

Special role of labor and management on the Joint Committee. In a workplace education setting, labor and management will play the primary roles in developing the program because they are the actual partners at the workplace and can have informal and regular contact in planning and implementing the program. It is imperative that representation at meetings between the parties be balanced between labor and management to ensure success and maintain worker confidence in the project. In unionized workplaces, one of the most critical ground rules for success is that the union be an equal partner with the employer in a joint program.

Initially, the employer, the union, and the educational provider are likely to have different ideas on how the program should be designed, governed, and implemented. They will have differing ideas about what the educational needs of the workplace are and what the goals of the program should be. This part of the development phase will be a political process as well as an educational process. Creating a successful joint program requires compromise, negotiation and "selling" the results to everyone concerned. The process can be seen as negotiating an education or training agreement where the different interests of the partners must be balanced and brought together in a general statement that everyone can support. There must be a shared understanding about what the respective roles of the union and employer are.

Developing a statement of understanding. A general statement of understanding, or letter of intent, which includes the general principles of the program should be designed. This statement should include the basic educational goals and principles of the program and will be a public document that begins the outreach process in the plant and in the community. This letter of intent will not include all the details of the program. The specific roles and responsibilities of each party will have to be spelled out at a later date. From this agreement the union and the employer can negotiate the actual structure of the program.

In Project ELI this process resulted in the following agreement about the specific roles and responsibilities of each partner.

Champion International agreed to: 1) provide a matching grant for the program; 2) make an in-kind contribution of an on-site facility for small classes and a project office; 3) release employees to participate; and 4) pay employees to attend training.

Lumber, Production and Industrial Workers Union Local 2581 agreed to: 1) participate in the development and design of the project; 2) serve on the Joint Committee; 3) provide peer counselors to aid in recruitment and retention; and 4) consult on curriculum development and the overall implementation of Project ELI.

Flathead Valley Community College agreed to: 1) provide necessary educational and training services; 2) provide teachers for the program; 3) work with the program staff, the union and the company to develop work-based curricula to serve the special needs of the work force.

Montana State AFL-CIO agreed to: 1) be the principal investigator in seeking the Department of Education grant; 2) facilitate the development of the program and the actual writing of the grant; 3) coordinate the establishment of the Joint Committee; and 4) serve as the administrative body for the program and the grant.

The union role in workplace literacy and education programs

For the union to assume a key role in the operation of an education, training, or literacy program is an exciting new concept for unions and employers. From the union perspective, developing an education program can be as important as its more traditional functions. By being directly involved, the union is in a position to respond quickly to workers' education, training, or certification needs. The union and its members are also in an ideal position to serve as recruiters for the educational program once it has been developed. The active participation of the union creates a greater sense of ownership among members that can make programs more effective. Ownership of the program creates greater trust and responsibility.

For this union role to work, each partner on the Joint Committee must have clearly defined responsibilities and the union must be an equal partner with the employer. Functioning as an equal partner with management means having an equal share in designing the governing structure, assessing the learning needs of the workers, determining the location and physical environment of the learning center, and deciding to engage a professional manager or other needed professional services.

The Role of Peer Counselors

Union members or workers who do the recruitment for the program are often referred to as peer counselors. Peer counselors can be shop stewards, respected members of the union, or workers with special qualifications. Peer counselors provide the program with a network in the workplace. Peer counselors are a source of program information and personal support for program participants.

The role of the peer counselor requires some training and a strong commitment to the program. Training is necessary to help peer counselors understand barriers to learning and to develop appropriate communication and counseling skills that will help them provide support to other workers in the program. While some members may have previous training in this field, most members will need substantial training to function as a peer counselor. This is a task that should be delegated to one of the many professional agencies that will design a program to fit the needs of the program.

To become effective recruiters, peer counselors must understand the importance of basic skill upgrading for workers and its impact on job retention and advancement. Peer counselors must overcome their own fears about participating in an education program if they are to help their co-workers deal with this issue. They must also understand the barriers that prevent people from using the learning opportunities that are available to them. Because peer counselors know and have the trust of their co-workers, they are able to talk with co-workers about these barriers.

Peer counselors must be willing to take the time to distribute information about the program to workers by passing out flyers, putting up posters, making presentations at departmental meetings, and talking informally with their co-workers. Many peer counselors also participate in the program and become a source of direct information and word-of-mouth advertising. Peer counselors should be formal or informal members of the workplace education program team. They can provide a source of information for program staff and teachers that will enable them to modify and improve the program as it progresses. Because they are talking with workers who are in the classes, and because of their own participation in the program, peer counselors can assess whether the program is meeting the needs of the workers and provide the committee with both positive and negative feedback. The peer counselors are advocates for both the program and for the workers. They play a critical role in linking workers and the program



Peer Counselor at Work!

In one instance, a peer counselor recognized that a co-worker was not able to read. He suggested that the worker participate in Project ELI, but the worker was reluctant to admit that he couldn't read and was hesitant to seek help. The peer counselor, wanting to support the worker in taking the first step to sign up in the program, said he also had a reading problem that he wanted to get help with. The peer counselor and his co-worker went to Project ELI together. The reluctant worker eventually improved his reading and writing skills enough to write his first letter to his children.

The role of supervisors in program success

While front-line supervisors may not be directly involved in the Joint Committee, their support of a workplace literacy and education program is also critical to its success. They should be involved in discussions about the program at the earliest possible time and kept informed throughout the program. For a workplace education program to be fully successful, supervisors and managers must understand the impact of functional illiteracy on productivity and competitiveness and what this means to their business. They must want their people to be successful and promote the program whenever they have the chance. Supervisors can become unofficial recruiters for the program as they observe workers developing new skills and self-confidence in the workplace.

Getting supervisors and managers involved in the program must be linked to the company's business strategy and must be understood as a priority of top management. It is important to show managers and supervisors that increased skills can lead to superior productivity and profitability, even though the results may not be immediate. Program staff can help in this process of involving supervisors and managers by extending personal invitations to tour the learning center or, with the student's permission, to attend class sessions to observe the program in action.

Doing the Needs Assessment

Once it has been established that a workplace education program is needed, the next step is to determine the specific educational needs of the workplace. It is not always necessary to rely on outside experts to assess the learning needs of workers. It is more important to draw upon the results of discussions among workers and the planning group. If the decision is made to select an outside expert to conduct a needs assessment, choose an individual or organization that is an independent third-party who has knowledgeable about your industry and its work requirements.

The basic task is to assess the skills that workers and union members require, both in the workplace and to meet their own educational goals. Three useful areas of information that can be used to determine the educational needs of the workplace are job descriptions, job-skill analyses and worker qualifications. The design of the program must also accommodate any projected changes in the workplace in the areas of new technology or the re-organization of work.

Involving the workers

An often neglected step in the needs assessment process is consulting with the workers themselves. Find out what workers want! They have a knowledge and understanding of the work process and they know what they need to learn in order to perform their jobs better. Involving workers in the needs assessment also establishes a participatory process that gives the program credibility in the eyes of the workers.

Perform a needs assessment before the project begins and continue to consult with workers throughout the program to find out what their needs are and how the program can be improved. Workers participate in an education program if they feel confident it will help them reach their learning goals. The need and desire for education and training is universal. A needs assessment is a way of defining those needs.

In Project ELI, the program was initially designed to upgrade workers' skills in preparation for state-of-the art changes proposed for the Champion complex. Those changes were put on hold, but a design team working on the proposal predicted workers would need some post-secondary level education to work in the new plant or in those areas of the existing plant that introduced new technology. The labor-management design team, including organized labor and supervisors, looked at worker records, interviewed workers and interviewed supervisors to determine the educational levels of employees at the mill. A random sampling at Champion indicated that approximately one-third of the workers had not completed high school and 16% had not completed elementary school. Only 22% of the workforce had any post-secondary education, with 2% having graduated with a Bachelor's degree. This information indicated that 78% of the current work force were insufficiently prepared for employment in the changing world and workplace. The need for a workplace education program was clear.

Funding Sources

Project ELI was supported by a National Workplace Education grant from the U.S. Department of Education and additional cash and in-kind funding provided by the Project ELI partners. The program was administered by the Montana State AFL-CIO.

Public agencies that provide grants have their own program objectives that may or may not be consistent with the needs of the workplace or union practices or programs. Grants from outside institutions are usually for a specific time period, often one to three years in duration. Industry matching funds are a necessary ingredient when seeking funding through federal and state grants. The form of funding and the in-kind factor are very important considerations when laying the groundwork for a grant application. The availability of funding from these sources is limited and can vary from year to year. The U.S. Departments of Education and Labor, and the Vista Literacy Corps are the most commonly contacted federal agencies.

It is important not to depend entirely on public grants and to have a plan for continuing the program after public funding is completed. Grants from public sources are limited, and program designers are encouraged to seek support from foundations or other private organizations. Look for organizations that have shown an interest in making grants to labor-organizations and have made literacy, training, or education a funding priority. Program funding may also be generated as a negotiated amount which is part of a union contract, matching employer funds, non-financial support, or by outside funding. Once funding has been secured, the bargaining agreement may authorize an education or training trust fund to handle the moneys. A negotiated funding base as part of the contract, or as an agreement in non-union workplaces, is essential for a continuing program in which the labor-management team or the Joint Committee has control over access, methods and program content.

If an outside grant or matching fund provides the majority of the education or training funds, the administrator of these funds should be represented on the Joint Committee. In the case of extensive external funding, a director should be chosen to oversee the project and to be an on-site manager who will implement the policy set by the Joint Committee. A management fee will be charged by the administrative agency. The director is usually a professional educator with a knowledge of the culture of work. In a workplace education program in a unionized setting, it is important that the director have strong ties with labor to facilitate the cooperative working relations between labor and management.

It is also important to tie the workplace education program to the collective bargaining process or to an on-going labor-management relationship. With this kind of an agreement, it is easy to deal with the education and training needs in the context of other workplace priorities. With a negotiated program, a firm commitment for the period of the collective bargaining agreement can be relied upon.

Developing the Educational Plan

The Educational Plan will describe the structure of the educational services to be offered. The first step is to formulate a clear statement of program goals and needs. This statement will provide the framework necessary to build a program. Project ELI began by adopting this mission statement: "A partnership effort dedicated to upgrading mill workers' skills for the future." This stated goal of the program then had to be translated into a plan listing more specific goals and objectives and setting out the actual structure of the program.

Before teaching begins, decisions must be made on a wide range of education and training issues. Questions to be answered will include: What kind of classes will be offered? Who will teach the courses? How many workers will be served? What population will be targeted? Where will the classes be held? Will the plan include work release time? How much will the program cost? How will the program be evaluated? Decisions must also be made about who will run the program, how the staff will be selected, and who will oversee the program to assure that it is accountable to the various partners in the project. The oversight group should guarantee that labor and management will have equal input into the management of the program.

A balanced education and training program will include a basic skills program and a specific skills program. It may also include a full-scale GED preparation program. If your local community Adult Basic Education center is accessible and not threatening to your workers, the GED preparation could be delegated to that agency. If this agency is not highly regarded by your members, or it is not easily accessible to workers, a full-scale GED program should be included on the workplace education program.

The heart of every educational program is the basic skills program. The basic skills program should include instruction in math, reading and language arts based on workplace-specific curricula. Job-specific skill classes can provide training in the areas of computer literacy and operation, math, statistical analysis, production statistics, interpersonal communication, and participatory management.

Using workplace-based curricula

All workplace instruction should be tailored to the specific individual needs of participants and should utilize workplace-based curricula. Using material that is familiar to the learner accelerates the learning process and makes it more immediately applicable on the job. Individualized educational plans should be developed jointly by instructors and adult learners. Individual instruction and tutoring should be easily available. Examples of workplace-based curricula that were developed for use in Project ELI classes included: math for hydraulics, a boilers license class, reading for welding, writing for reporters of the internal Champion newsletter, writing using word processing programs and oral communication.

If one of the objectives of the program is to provide an opportunity for workers to earn academic credit or job certification credentials, it will be necessary to work with educational institutions or industry certification boards to ensure that the courses you design meet established education or training standards. The same is true of preparing people for job classification upgrades. Arrangements should be negotiated with any existing training committees early in the planning process. Having course work connected to certification or job upgrades is an important tool for marketing the program. While many workers are interested in learning for its own sake, having practical goals and outcomes is an important incentive for participation.

Respecting Workers as Learners

Workers often come into the classroom directly from the mill. To some teachers, they might seem unfit for learning because they do not fit "normal" expectations of what students are like. In spite of this, these workers are ready to learn. At one local school a Champion employee was told that he would have to go home and clean up before he could be in the class. The travel time requirements made that impossible. Needless to say, that worker did not get a good impression of the education community and was discouraged from pursuing other classes. At Project ELI workers were accepted as they were. It is important for teachers to respect workers as they are and to understand what they do. Workplace education works best when there is mutual respect and teachers and students learn from each other.

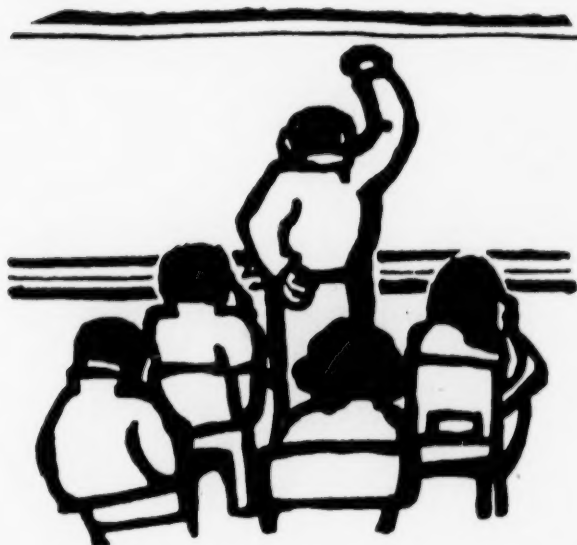
Choosing the teaching staff.

In a workplace literacy and education program, it is important to choose teachers who are not bound by traditional school-based teaching concepts. Teaching effectively in a work-based program requires a different outlook and different methods. Teachers will need to feel comfortable in a non-traditional learning settings such as the workplace itself or a union hall. Teachers in workplace literacy and education programs should be knowledgeable about the kind of work that their students do. They should also have an understanding and an appreciation of the labor movement and the role of unions. A background in some comparable field of work would be beneficial to the teacher in his or her ability to teach and relate to workers as students. Teachers who come from a union background are generally more sensitive to the needs that exist in the unionized workplace. The labor-management members of the Joint Committee will need to inform educators about the specific educational needs of the workplace.

The Joint Committee will have to decide whether to hire full-time teachers or to contract with educational institutions. Developing a workplace education program is an opportunity to build new relationships with the education community and to increase participants' access to established education and training services in the community. A wide variety of educational alternatives exist including public and private post-secondary institutions, vocational-technical institutions operated by the state education system, adult basic education programs run by public schools or colleges, a GED program that provides high school equivalence diplomas, and the services of non-traditional providers of adult education and training. In Project ELI, the labor-management members of the Joint Committee were represented on the community college teacher selection committee that chose the teachers who staffed the on-site component of the program.

Job-linked learning

A July 1991 report entitled "Job-Linked Literacy: Innovative Strategies at Work," indicated that employees involved in workplace literacy programs learn faster, retain more and have an improved ability to deal with non-work problems than do adults studying in general literacy programs. Linking the learning to job-related factors has a decided advantage over traditional literacy programs which provide basic skills instruction unrelated to job requirements and environment. Job-linked literacy programs are most effective when the basic skills curriculum is based on a job analysis and taught in a developmental manner. What is learned must apply directly to materials, equipment and the work process on the job. Having instruction at the workplace is an important way to link learning to the job.



Creating The Learning Environment

The Joint Committee or labor-management team should take the lead in the creation of a positive classroom environment. A classroom tailored to the participants' distinct needs must be maintained. If the program has a Learning Center, the environment should be open, friendly, casual, and not threatening. There should be provisions for privacy and areas available for quiet study as well as an open area where mini-classes and group work can take place. The geographic location of the learning center should be easily accessible and conveniently located for before-shift and after-shift use. Accessibility of program services is very important, particularly if the program includes classes on work-release time. If at all possible, the Learning Center should be in "neutral" worker-friendly territory. The Project ELI program was operated in a double-wide trailer on the plant grounds.

Applying Learning to the Workplace

One Champion sawyer, taking a math upgrade class at Project ELI, recognized that the method of cutting wood in the mill resulted in waste. Using the math skills he was learning to analyze the amount of waste, he proposed different methods of cutting logs to reduce waste. A portable mill was brought in to cut the 2 x 4s, and in one shift saved \$4000 worth of 2 x 4s. Though the limitations of the existing machinery in the plant did not allow for institutionalizing these savings, the Project ELI class helped the employee analyze the loss and determine that more wood could be recovered if they had the proper milling equipment.

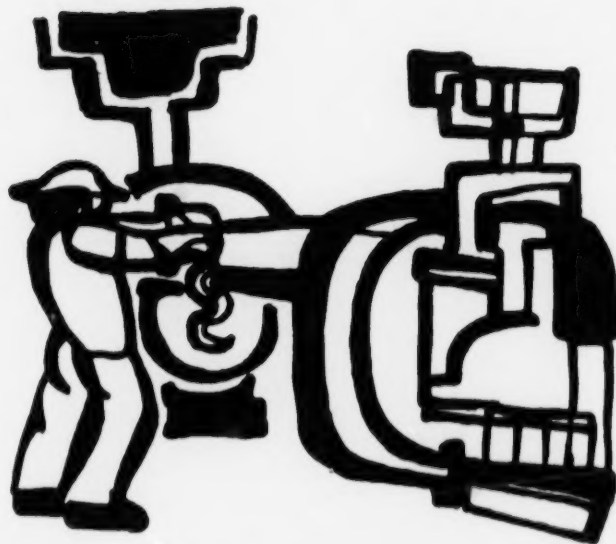
Training the teaching staff to create and promote a friendly and easily accessible learning environment is crucial. Teachers should be encouraged to make a conscious effort to put workers at ease. Workers, who may have had negative experiences in school, may be very uncomfortable coming in to a learning environment of any kind. It's a good idea to have a coffee pot and an area where people can just "hang out". To make the program worker-friendly, assessments of participants' needs and interests should be used to continually update the program so that it meets workers' needs.

Access to the program should be as broad as possible and learning options should reflect the diverse learning styles of the workers. Some people will become involved through participating in classes, others through individual instruction. Working with participants to develop individual learning plans is often the key to developing meaningful and productive worker participation in other parts of the program.

Using and respecting workers knowledge

Participatory work-based learning is the goal. In general, individual learning plans should be developed from the application of job-based concepts that then progress to more theoretical concepts, not the other way around. Applications of what has been learned should be based on the individual's actual working environment. The use of work-based material grounds the learning experience in the concrete experience of the worker. In individual work, however, there should also be flexibility in the choice of subject matter to be studied. Learning can result from using any chosen topic if the student shows genuine interest, if he or she has a part in its development, and if it is used creatively by the teacher.

Workers learn best in the context of their own lives or jobs. The teaching staff should be selected based on sensitivity to the special needs and concerns of workers. In a worker-centered classroom, it is particularly important that learning take place in a way that preserves the worker's dignity and sense of self-worth. Workers need to have confidence that the program represents their interest, feel positive about it, and take pride in their accomplishments - whether they are working on basic skills or advanced statistical analysis.



Marketing and Managing the Program

No matter how good a program is, it must be marketed and promoted, just like any other product. The marketing, or recruitment, phase of the program is critical to its success and it should be thought through carefully. It is important to let workers know that everyone has full and fair access to the program. If people perceive that the program favors people who work certain shifts or jobs - or workers of a certain sex, race, or age, the program will not be successful in recruitment.

Getting the word out

All standard methods of advertising can be used to get information out to potential students and other interested parties. A coordinated multi-media campaign should be used to initiate the program. Passing out fliers, putting up posters, open houses, presentations at safety and other departmental meetings, publication of articles in the union's or employer's newsletter, and informal conversations are obvious ways to advertise. For a workplace literacy program, written announcements will not be as effective as personal contact. It is through this contact that program information is most effectively transmitted and a sense of trust in the program is built among workers. Establishing trust and program credibility is one of the most important goals of any recruitment effort.

The use of peer counselors at this time will be crucial (see page 12 above). If their training has been effective, peer counselors will be the most reliable source of initial enrollments in the program. These peer counselors have the trust of their co-workers and, through their training, understand the fears that many workers have of any education program. Continued training and contact with the peer counselors will be an on-going responsibility of the program staff and other designated bodies. The program director should maintain weekly contact with peer counselors.

Confidentiality and record keeping

Participation in workplace literacy and education programs should be voluntary and workers should be guaranteed that their participation in the program will be protected by confidentiality. It is important for participants to know that the program records will not be available to anyone outside the program staff without their permission and that the records are secure from unwarranted entry. **Record keeping should be confidential and accurate.**

If a work-release or pay-for-time provision is in effect, individual use of the program must be recorded. Beyond assuring that people are paid for their time, it is not necessary for industry or union representatives to have access to records that reflect individual use of the program. General accounting and reporting practices should be followed at labor-management meetings to ensure the authenticity of the program's progress, accomplishments, and expenditures.

Demonstrating Confidentiality!

To show participants that their records would be safe, Project ELI staff put a chain and padlock on the file cabinets that held student records. The chain and lock were a visible sign that no one could just walk into the ELI office and gain access to the files of students.

Record keeping systems

Information should be kept as a soft file in a database computer program and also as a hard file in a standard file system. Duplication of information is a standard safety mechanism for protection of information. The data base system of storage makes statistical information easily accessible for reporting and informational purposes. Hard files give the working staff access to the records for daily use and periodic changes, as well as any updating that is necessary. The data base file and the hard file will continually be updated with new entries as workers make use of the program. Workers' use of the program in terms of classes taken, hours in the program, certifications received, and other statistical categories agreed upon by the Joint Committee must be carefully recorded.

Program enrollment

The importance of the registration and enrollment procedure, which is the first official point of contact with the program, should not be underestimated. The success or failure of the program can be decided during the enrollment process. If the first contact is positive, it will lead to meaningful and productive worker participation and the next steps in the program will be taken with a growing feeling of self-confidence and acceptance. The staff must be sensitive to the special needs and concerns of the workers at all stages of the program. Staff can make the transition smoother by getting students scheduled for initial interviews and making them feel at ease by engaging in casual conversation or doing something as simple as getting students a cup of coffee.

The physical act of registration should be as non-threatening as possible. A simple information sheet, which can be easily filled out by the worker, can be designed to fit program needs. Staff members, peer counselors or an administrative assistant can assist in this very important step in a worker's decision to participate in the program. The form used by Project ELI to record this information is found on the following page.

Enrollment Form

Name _____ Phone number _____
Home address _____
Marital status _____ Number of children _____
Date of birth _____ Sex _____
Department _____
Supervisor _____ Hire date _____
Areas of interest _____
How did you hear about the program? _____
Date of enrollment _____

Initial interviews

The initial interview is the second step in the enrollment and recruitment process. If there is to be a "hard sell," this is when it will occur. The program is voluntary, but enrollment in the education or training program can be encouraged with a convincing description of the program, its benefits, and how it can advance the worker in his or her job or improve the participant's personal life. The interviewer (a peer counselor, teacher or other program staff person) must be viewed as a person that has the worker's best interests at heart, is knowledgeable about the program, the worker's job, and is sympathetic to their needs.

Individual interviews should be consistent among workers in terms of the basic information taken. Interviewers should be aware of the difference among workers and be flexible in the pursuit of information. The interview process should be recognized as an integral part of worker's education experience in the program. The interview will have an important impact on how workers will view the education and training program and may influence their participation in it. The interview can include questions outside the written format that allow the person being interviewed to personalize the interview through the use of their own experiences.

The initial interview generates important information about the potential participant's past experiences with education and how he or she may view learning and participation in the program. It should also touch on what skills he or she feels are needed to become a more effective worker or to advance on the job. It is during this portion of the interview that a commitment to enter the program is generally made. Once this commitment is given, the assessment process can continue to the next step which may, or may not, include testing. An example of the interview questions used by Project is shown on the following page.

Interview Questions

Name _____ Date _____

Where and when did you go to high school? _____

Grade completed _____ Year graduated? _____

What level of math did you take? _____

What English classes did you have? _____

If you did not complete high school, why did you leave school? _____

Have you been in school since? _____

College? _____ Technical training? _____ Military? _____

What was school like for you? _____

What was your favorite subject? _____

What was your worst subject? _____

If you returned to school, how would you like it to be different? _____

What skills do you feel you will need to advance in your job? _____

What skills do you think you will need if the new plant opens? _____

How do you learn best? _____

How do you feel about going back into the classroom? _____

What do you think would be the hardest thing about going back? _____

How are people talking about the program? _____

Have you talked to anyone about the program? _____

Initial testing and assessment

The fear of testing is, for many workers, a deterrent to entering any educational program. If a participant displays low self-confidence, this may correspond to a fear of testing. Initial testing is important in relation to the evaluation process, but it should not be a requirement for a worker to participate in the program. If people indicate anxiety or unwillingness to take a test, the use of a standardized test should be postponed at this point. Other forms of worker achievement can be used as a measure of success or failure for any particular portion of the program.

Later in the program, when the participant has experienced some success and has more self-confidence, a standardized test can be administered. The purpose of the testing and assessment session is to provide the instructor and the worker with enough information to determine subsequent educational needs and to recommend a basic or a specific program of instruction.

With adequate information, realistic goals can be set -- goals that the worker has had a major role in determining. The following goal statement from Project ELI is a result of an instructor and a student working together to set a realistic goal. The chances of a worker completing a course of study will be greatly improved by involving him or her in the design of the education plan. This is an example of a worker-centered education or training program in action.

Setting Goals and Objectives

Name: Doe, John

Date: 8/30/91

Goals: John's goal is to upgrade his math skills. He currently works in the plywood plant. He feels that by increasing his math skills, particularly in fractions, decimals, and percentages, he will be a more valuable worker and give himself a more competitive edge in the workforce.

Objectives: John will reach his goal, beginning with brushing up on multiplication of decimals. He will utilize workplace field experiences, workbooks, and computer software programs. John will achieve at least an 80% proficiency on each learned skill before advancing to the next skill level. He will be encouraged to enroll in any specific skills classes or workshops offered which may relate to his job or to improvement of his math skills.

Learning progress logs

Confidential and accurate record keeping with periodic assessment is a major component of the training and educational program. Records are a valuable source of information in the evaluation of individual learning and overall program success. A progress log must be completed by the instructor for each instructional contact. Access to these records must be limited to the teacher and the student. A release form signed by the participant is required to release any material that can directly identify the worker from his or her file. With this assurance, the worker will be more inclined to participate. Unidentified statistical information can be taken from participant files and used to evaluate the program.

Daily/Weekly Log Sheet

Name: Doe, Jane

Week ending: 4-3-92

Skill(s): Mathematics

Total time: 60 minutes

Instruction/Activity/Comments: 3-31-92 Jane had worked on common fractions at the last meeting. She and several workers were discussing the dimensions of the plies that make up various sheets of plywood at her workplace. Most of the class time was taken up in measuring plies, adding, and subtracting fractional values represented by the piles that make up the product of the plywood plant. She mentioned that she had been putting sheets together for several years and up until this time did not stop to think about the thicknesses of the plies and what combination it took to make the various final dimensions. She continues to use the text *Math for Carpenters* with good success.

Lesson plan/next meeting: Jane will be expected to complete the exercise on page 45 and be prepared for an evaluation on adding and subtracting fractions. The next meeting will be 4-6-92.

Signature:

Time record sheets

Accurate recording of the amount of time spent with each participant must be maintained. If the participant is paid for time spent in the program or is released from work for instruction, a financial reporting system must be established. Most industries have a time record form that can be adapted to the education or training program. A job function number is assigned by the accounting department, and all financial transactions are controlled through that number. Project ELI uses the following form to record basic and specific skill hours.

Job Transfer Time Record

Employee Name _____ Date _____
Shift Worked _____ Supervisor _____
Hours Worked _____
Function-Job No. _____
Rate of Pay _____
Signature _____

The length of instruction is controlled by the skills being covered and the goals generated during the assessment and enrollment process. A regular schedule of instruction, if possible, should be maintained. If the industry is on multiple and/or rotating shifts, a regular schedule of instruction will be impossible to maintain. A non-traditional instruction schedule is a necessary requirement for an effective program that does not eliminate or minimize participation by a segment of the workforce that does not work a standard shift.

Extended hours

Hours of operation for the Project ELI classroom and office were 6 a.m. to 7 p.m. These hours allowed workers on rotating shifts to participate in the program more easily. The schedule of services must conform to the reality of the workers schedules if the program is to be effective. The accessibility that the extended hours create is a very important part of program success.



Exit evaluations

When instruction is complete and the participant has reached his or her goal, a formal exit evaluation should be given. The exit evaluation should be filled out by the student. The exit evaluation is an important tool for gauging program success. Exit evaluations, with no individual identifying data, should be examined by the educational committee on a regular basis to see if changes are necessary to improve the program.

Exit Evaluation

Name _____ Date _____

What was your goal when you entered the program? _____

Did you accomplish your goal? Yes _____ No _____

Did you receive any additional instruction? Yes _____ No _____

How many hours did you spend in the program? _____

1-5 _____ 6-10 _____ 11-15 _____ 16-20 _____ Over 20 _____

Check the following teaching tools that were used _____

Text books _____ Computers _____ Mill manuals _____ Lecture _____

Field Experience _____ Tape Recorder _____ Dictionary _____

Thesaurus _____ Tape Measure _____ Overhead Projector _____

Magazines _____ Out In The Mill _____ Own Material _____

How would you rate your instruction? _____

Excellent _____ Above Average _____ Average _____ Poor _____

Was the instructor friendly? _____

Always _____ Most of the Time _____ Sometimes _____ Never _____

Do you feel that this instruction has helped you? Yes _____ No _____

Please tell why you answered Yes or No. _____

What can we do to make this program better? _____

Tracking Program Progress

The labor-management team must take an active part in monitoring the education and training program. This can be done formally through the labor-management committee. The committee will have three primary functions: 1) making program policy decisions; 2) monitoring program performance; and 3) ensuring that the funds are being used responsibly. If a professional program manager is employed, the manager should suggest the direction the program will take and present information about program performance and finances to the Joint Committee.

The Joint Committee must be convinced that equal access is available to all workers and that the workers are receiving adequate instruction. Statistical reports are an effective method to monitor a program's operation. Statistical reports can include:

- How many workers are participating?
- What age groups are participating?
- Is the program being used by all seniority levels.
- How many hours of instruction have been given?
- What is the drop-out rate in specific skills and basic skills classes?
- In certification related classes, what percent passed examinations?

These are some of the more easily compiled statistics that can and should be a regular presentation at Joint Committee meetings.

Interpreting statistical measures

Statistical results must be examined carefully because the data compiled may not always show a complete picture of what is actually occurring in the program. Number of users and number of hours of instruction can show that a program is being used, but that is only a measure of quantity and does not necessarily indicate the quality of instruction. For example, Figure 1 shows instructional hours/month and the cost in dollars at Project ELI, but it does not tell anything about the users age, seniority, sex, or success rate. A series of figures appearing in the Appendices show various statistical measures used to describe program participation. Content of the figures is described below.

Figure 1: It is important to understand the variables that affect the statistical results. In the case of Figure 1 (see Appendix), holidays, hunting season, special promotions, the newness of the program, and number of classes being conducted during a particular month caused a fluctuation in usage. These statistics show only that the program is being used extensively. Figure 1 does not show who used the program, or distinguish between basic and specific skill use.

Figure 2: This figure (see Appendix) shows the users of the program in relation to age levels. It breaks down the users into male and female categories. The graph also shows use by both male and female workers. Few young people are employed at the mill, and the majority of workers are

male. The ratio of male to female workers employed by the plant would have to be known to determine if there is a discrepancy between male and female use. If the ratio indicated that the program was not being used by a particular grouping the reason would have to be investigated. Equal access to the program for males and females is an important consideration for the Joint Committee, for legal reasons as well as for the educational good of all.

Figure 3: This figure (see Appendix) shows use by both male and female workers by seniority.

Figure 4: This figure (see Appendix) shows the use of the program by job units, and is broken down into use by male and female participants. It indicates job units that are exclusively male. A job description and the number of male and female employees in each job unit would have to be examined to decide if participation by a particular job unit needs to be examined. This can also indicate that a particular type of skill training that is inherent to a particular job unit, has not yet been offered.

Figure 5: This figure (see Appendix) shows use by workers from August 26, 1991 through October 1992. It shows the number of individual contacts made by instructors each week. Many of the students were contacted by the teacher more than once in each week's total. It does not make any distinction between male and female users and is a record of only basic skill participants. This type of use device is valuable to track the general health of a particular program. A basic skills program will, with a given population, show a gradual decline because the pool of potential users is shrinking. This graph indicates that the population most likely to profit from this type of instruction appears to be diminishing. This graph indicates that a different appeal may be necessary to reach the workers who still need basic skill training.

Many other types of statistics can be generated by consulting the records that have been stored in the data base files. It is the responsibility of the program manager and the Joint Committee to make use of this tool to help monitor its educational or training program.

Project ELI's original goal was to serve 300 workers out of a total workforce of 550. Because of cutbacks in the work force, retirement incentives and attrition, the total number of workers declined at the Champion mill. In spite of this, 390 workers enrolled in the services offered by Project ELI

Informal program monitoring

A less formal method of monitoring your program can be accomplished by the feedback that is periodically supplied by the peer counselors. If peer counselors are active participants in the program, both as students and as observers, they will be a prime source of information about how the program is working. Their feedback can be used to identify any problems in the program and to make modifications to address them. The peer counselor group needs on-going support, recognition and encouragement so that they continue to actively participate in the program. Training time and money spent on developing the peer counselor aspect of the program is money well spent.

Regular feedback should also be generated from the learners, instructors and management. Periodic evaluations and surveys should be taken and the results considered at the Joint Committee meetings. Individual instructors also need to be evaluated within the program and given support where they need it. The success of the program is contingent on successful instructors who can relate well with the workers and their specific learning needs.

Testing

Progress by students should be examined on a regular basis during the program. Project ELI used the Test of Adult Basic Education (TABE) to test skill levels before and after instruction. While the TABE is not always an accurate evaluation of workplace education skills, but is a standardized test with national norms that gives a teacher a reference point so they can start instruction at an appropriate level. Individual results are always confidential, but composite scores and unidentified individual scores can be reviewed by the Joint Committee to evaluate the program and to identify areas that need strengthening.



Developing the Curriculum

Developing curriculum based on the workplace enhances learning and retention. Linking the learning to something that the learner knows about, makes the learning process more concrete. Being able to directly apply what is being learned also gives greater coherence to the learning. Developing curricula that are drawn from the actual workplace and work process are an important part of making a workplace literacy and education program work. Technical curricula should be based on application to the job, linking the application to concepts and then progressing to the more abstract level of theory. In one-on-one sessions, the applications chosen for the curriculum should be based on the individual learner's actual working environment.

Loading the flatcar

As part of their job, some Project ELI participants loaded finished lumber onto 72-foot-long boxcars. They estimated how much lumber could be loaded by sight - an inefficient process. In Project ELI they learned how to use multiples of 72 to figure out the combinations of lumber that would most efficiently fit on the flatcar. This enabled them to save time and load the flatcar in a more efficient way. The workers then suggested setting up a computer model to figure out the best combinations of available lumber to make up the load. Their learning was based on solving real on-the-job problems and then progressing from the concrete application to the larger theoretical concepts.

Worker-Centered Curriculum.

The curriculum in Project ELI was worker-centered. It built on what the workers already knew and used that knowledge to learn new skills and educate the whole person. Individual work curriculum was developed in a participatory process with the learner. People learn in different ways and curriculum must be adapted to individual learning styles. Some people learn theoretical material easily, while others learn through a "hands-on" method. Existing curriculum will not automatically fit a training or education program. To build the most effective program possible, the curriculum must reflect the specific conditions and needs of the participants.

Curriculum development is a process, and specific steps should be taken to ensure that effective and transferable skills are taught based on the existing knowledge of the workers and the content being studied. Teachers must be creative and flexible to build curricula that makes sense from the learners' perspective. This process is applicable to both specific and basic skills.

Developing Specific Skills Curriculum

In developing the specific skills curricula for Project ELI, a great deal of care was taken to make sure that courses would be taught in a way that was directly related to the workplace and would address the needs of both the workers and the employer. The process of developing curriculum used in Project ELI is outlined below.

Developing a Specific Skills Curriculum

Goal: Identify, assess, and develop a specific skills curriculum that will meet the academic needs of the employees and the workplace needs of the employer.

Strategies

1. Determine specific course needs in discussion with union, production, and management groups.
2. Assess the workers' overall specific course requirements based on:
 - the current structure of jobs and work in the plant
 - changes in the work force
 - changes in job technology
 - changes in products and manufacturing methods
3. Interview key managers and groups to gather information about existing and required skills.
4. Collect and analyze information as it relates to a specific course of study.
5. Prepare findings and recommendations that would be included in a specific course of study.
6. Contact and discuss teaching strategies, teaching materials, and general course development with the educational community.
7. Plan how, when, and where to offer a specific skills course
8. Present a plan of action to the Joint Committee.

Key Points:

1. The procedure will produce detailed information and recommendations for specific course development.
2. Union leadership, production supervisors, workers, and educators have all been involved in the process and share a sense of ownership in the course.
3. The specific skills course should be taught in a way that is academically beneficial to the worker and directly transferable to the workplace.

Once a course has been approved, the actual goals and objectives must be formulated. This is also a participatory process. Instructors, supervisors, workers and program staff should all be involved in giving the curriculum its final shape. An example of the goals and objectives of a specific skills class that linked reading and technical training is illustrated below.

Goals and Objectives for Reading/Welding Class

Welding is an important manufacturing process used in industry today. Advances made in welding technology have spurred the development of complex modern equipment allowing new applications and capabilities. Often new and advanced equipment finds its way into the workplace with little or no instruction on proper use and safety procedures which are necessary for proper operation. Most workers have the technical skills for traditional welding practices that are currently used within the workplace. These same workers, if taught the technical aspects of these new welding practices in an academic setting, could transfer this information into more effective work practices that better utilize the modern equipment available to them.

The primary goal of this class is to utilize an important and widely applied manufacturing process that is a part of the learners' work environment as a motivational tool for increasing reading comprehension and vocabulary. A secondary goal is to make workers aware of the fact that learning is a life long endeavor.

At the conclusion of the course workers will be expected to show an increase in technical reading comprehension and vocabulary. They are expected to be able to identify main ideas and supporting details of the technical material and to score an average of 70% on each individual reading comprehension exercise.

The objectives of this course will be determined by finding an appropriate welding text with an easy-to-follow format for easy reading and comprehension, consulting with workers whose job description includes welding, and securing an instructor who has the expertise to teach reading comprehension and is knowledgeable about modern welding practices.

The evaluation of the class consists of the administration of a standardized reading comprehension and vocabulary test before the class begins and at the conclusion of instruction. Samples from a reading comprehension welding test are shown on the following page.

Welding Reading Comprehension Test

Multiple Choice

- _____ 1. Heat directed to the weld joint should be _____ to prevent the weld puddle from becoming too large when welding in the overhead position.
- A. increased
 - B. reduced
 - C. kept the same
 - D. raised slightly
 - E. none of the above
- _____ 2. _____ controls the shape of the deposited bead when welding in positions other than flat.
- A. Proper torch manipulation
 - B. Keeping the flame at the proper distance
 - C. Adding filler rod to the puddle where it will prevent undercutting
 - D. all of the above
 - E. none of the above
- _____ 3. On overhead welds, the filler rod should be moved slowly in a _____ or swinging motion.
- A. up and down
 - B. straight
 - C. triangular
 - D. circular
 - E. none of the above
- _____ 4. When horizontal welding a butt joint, the flame should be directed more on the _____.
- A. weld puddle
 - B. bottom plate
 - C. top plate
 - D. end of the weld crater
 - E. all of the above

Developing Basic Skills Curriculum

Curriculum development for basic skills courses should follow similar steps to those used in developing the specific skills curriculum. Basic skills instruction is more likely to take place individually or in small groups. Goals and objectives for basic skills classes are designed to meet the specific needs of the individual or individuals involved. An example of the actual goals and objectives of a basic skills class from Project ELI is shown on the following page. In this example, the normal procedure for teaching addition of fractions is followed, but the application of the procedure is related directly to material handled in the workplace. Basic texts for all subjects may also be used, but examples always need to be linked to the job and the workplace.

Basic Skills Curriculum Form

Skill: Mathematics

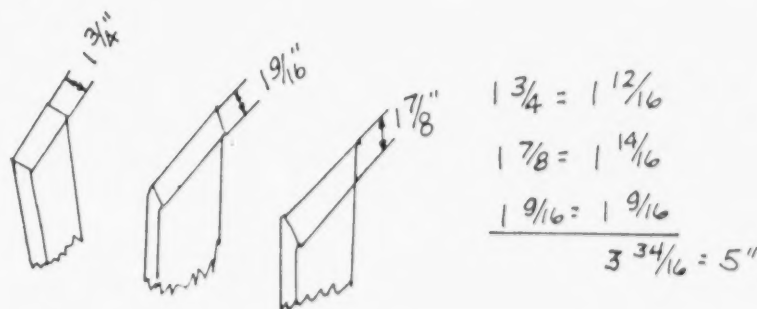
Goal: To learn the addition of fractions using common denominators

Objective: To measure the thickness of 3 to 5 kiln-dried boards and find the total thickness

Materials: Tape measure, paper, pencil, 3 to 5 kiln dried boards

Procedure: Measure 3-5 kiln-dried dimensional lumber boards, find the common denominator and convert measurements to comparable fractions.

Example:



Curriculum for basic skills in reading, math, spelling, and language is developed on a daily basis from workplace materials and from the workplace environment. The majority of the material is developed by coupling accepted teaching procedures and methods with workplace needs. Reading skills are taught with and from workplace related materials whenever available. Spelling word lists are developed from words used in the industry and supplied by the workers. The rules of spelling will be drawn from regular spelling texts. Language skills are developed by writing job descriptions, workplace memos, and other communications among workers, the union, and management. Math problems are generated from actual working conditions, workplace tools, and other workplace materials. It is important to keep a file of example lessons that can be used on a regular basis. An example of the Basic Skills Curriculum form used by Project ELI is shown above.

Principles of curriculum development

Curriculum development is one of the keys to the long-term success of a worker-centered training and education program. Workplace curriculum development is an essential continuing responsibility of the teaching staff. Curriculum development is a process of setting educational goals in the context of workers' needs and developing strategies to accomplish the goal. These strategies will result in developing teaching methods, accumulating teaching materials and establishing a learning environment that will have a positive impact on the learning process. The skills taught within the course of study must be developmental in nature and must have strong ties to the workplace. The starting place is always based upon what the worker already knows and what he needs to know to do his or her job more efficiently

Goals for a Math/Mechanical Advantage Class

Mechanisms abound in an industrial complex such as the Champion lumber mill. "Work" is the main component in a plant such as this. Reducing the amount of force necessary to accomplish that "work" is an important consideration both financially and in protecting the health and welfare of the worker. Understanding the concept of mechanical advantage is the key to getting work done efficiently and safely. Correct decisions in applying mechanical advantage can mean avoiding costly breakdowns and reducing the chances of industrial accidents.

The primary goal of this class is to utilize the important concept of "work" for teaching basic mathematical concepts that are necessary for workers given the responsibility of maintaining and operating machines that utilize the concept of mechanical advantage. A secondary goal is to make workers aware of the fact that learning is a lifelong endeavor.

At the end of the course the workers will be expected to be able to understand and mathematically solve problems involving the six most commonly used forms of mechanical advantage. They will be able to use problem solving techniques as well as the correct mathematical computations. Workers will be expected to score 80% or higher on the final examination.

The objectives of this course will be accomplished by observing, first hand, the plant operation and identifying the six most commonly used applications of mechanical advantage. Workers will be consulted to verify and to document actual field problems that can be utilized within the classroom. Workers own experiences will be discussed and utilized as problems whenever possible. The evaluation will be an examination using problem solving and computational skills.

Conclusion

Each workplace education program will be unique. It is important that each program be designed to meet the specific educational needs of the workplace and the workforce. In creating workplace literacy and education programs it is particularly important to involve the workers and the union at the earliest stages of development. Workers and their unions bring the perspective of the learners into the planning process. This makes it possible to design programs that make sense from the point of view of the "consumer". Business and industry are developing new flexible and creative work systems that are based on the principle of being responsive to the needs of consumers. Workplace literacy and education programs need to use the same approach to creating the best possible workplace education programs.

In the emerging world of work, training and life-long learning will be an increasingly important aspect of competitiveness. Designing effective worker-centered workplace education programs can give employers a head start on making them competitive and increasing their profitability. From the worker and union perspective, effective training and education programs will enable them to protect their jobs and to increase their opportunities for job advancement. Joint programs that recognize everyone's interest in improving the skill levels of the workers and the competitiveness of businesses can create the basis for strengthening workers and companies as we prepare for Workforce 2000.

In conclusion there are a few important ideas that need to be re-emphasized as basic principles and procedures necessary in building workplace education programs. These suggestions are based on the experience of the program staff and the Joint Committee in implementing Project ELI.

Role of the Joint Committee

- The strength and effectiveness of the Joint Committee is critically important to the program.
- In a workplace-centered education program, it is important to establish, in writing, the roles of each partner. The clearer the roles, and the understanding of those roles, the better the chances of success.
- Joint Committee meetings should remain focused on the program and not become side-tracked into collective-bargaining issues.
- Regular meetings of the Joint Committee should be established and these meetings should include a prepared agenda.

Role of Management

- Management must believe that workplace literacy and education programs are long-term investments in human capital, and that a better educated work force will pay dividends in the future.
- Management must make the necessary commitment to see that the program is successful, including dealing with the crucial issue of scheduling and release time.
- Workers must believe that all participants, including management, are serious about upgrading workers' skills.
- Building support among middle managers and supervisors is critical to program success.
- Lines of communication about the program and the company's on-going commitment to it must be visible.

Role of the Union

- The union acts as the representative of workers and their educational needs.
- Union support and the union role in the program needs to be visible and continually reinforced to create a sense of true partnership and a worker-identified program.
- The union, as well as program staff, must monitor the program to see that it is meeting workers educational needs.
- The union should select the peer counselors and play a coordinating role in the peer counselor phase of the program.

Role of the Education Partner

- The education partner serves on the Joint Committee and plays a part in the coordination and oversight of the project.
- The instructional staff is recruited and hired through the educational partner, with participation and consultation by the Joint Committee.
- The educational partner participates in the development of curriculum in conjunction with labor and management representatives.
- The educational partner acts as the agent for procuring the equipment and teaching materials used in the program.

Recruitment and Retention

- The importance of recruitment can't be over estimated. It is a process that must be evaluated on a periodic basis to assess its successes and failures.
- Using peer counselors effectively is one of the keys to a successful recruiting strategy. Peer counselors are the active link between the program staff, the teachers, the workers and the Joint Committee.
- There are many ways to improve education and workers' skills. The challenge is getting workers into the classroom. The trick is to take learning to the workers and adapt the learning to their needs.
- It's important that the program have a broad base of support. Participants should reach out to people who are strong leaders in the work force.
- Participants must be assured that no stigma is attached to participation in the program and that data about their participation is confidential.
- Many of the workers may have failed in the traditional education system, and their desire to enter another system may be low or non-existent. They need support in order to participate.
- Participation GED programs may be low because workers are concerned about revealing facts about their previous educational background.

Program Considerations

- It helps to house the education site on neutral ground where workers can feel comfortable. Project ELI was housed in a self-contained trailer near the administration building.
- Adding a level of informality helps workers relax and learn.
- Avoid negative connotations in describing services. For example, a basic skills course can be called a skills upgrading class.
- The direct teaching staff must have a fundamental understanding of workers, their needs and the workplace.
- Staff must be flexible and willing to teach around workers' schedules.
- It is important to establish a good system for collecting baseline data. Collection and comparison of such data can be helpful in making adjustments in the program.

The Role of the Director

- The director has enormous responsibilities for scheduling, supervising staff, monitoring instruction, staffing the Joint Committee, maintaining the program's fiscal responsibility and working with the peer counselors, union and management.
- It's important to select an Director who can negotiate, is a good diplomat, a skilled administrator, a skilled politician, and a skilled teacher.
- In the political arena, the director must walk the tightrope between labor and management and act as an advocate for workers and the program.
- The Director should meet with peer counselors regularly to get feedback on the program and suggestions on how to improve it.

A final word

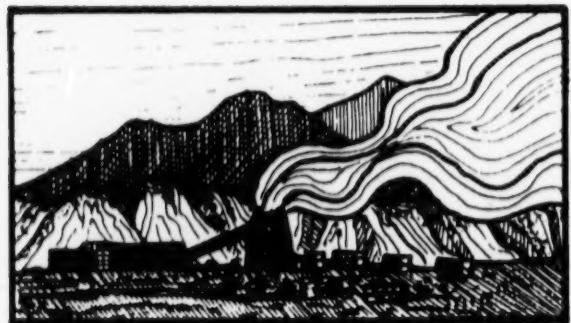
Some of the significant program accomplishments don't show up in the statistics. The experience at Project ELI has shown that there are intangible areas of success that have had a major impact on workers and the workplace. The first area has been a marked increase in worker self-confidence that has had an impact in their lives both on and off the job. For people who have had negative experiences in the school system, discovering that they are able to learn in this different environment has increased self-confidence. People have discovered that they are capable of learning and that learning is fun. This can't be quantified, but it does show up in their performance on the job and has resulted in greater confidence, skill and willingness to take part in participative management at the mill.

Project ELI operated at the Champion mill during a period of change. Participative management had been introduced and there was an attempt to change the old confrontational style at the workplace to a more collaborative one. This process also coincided with a volatile period in the lumber industry. Taken in combination, these factors have lead to a much greater awareness and interest on the part of the workforce to learn more about the work process, the economics of the industry and to try and find ways to improve profitability and competitiveness. There is general agreement among workers, program staff, managers, supervisors and the union that there is a greater awareness and interest in the production process and the well-being of the mill. It is impossible to measure the impact of such a change in consciousness directly, but it is clear that changes have taken place and that Project ELI has made a significant contribution to that process and the positive outcome.

Project ELI: Goals and Achievements

	Goal	Achievement
Specific Skills	150	163
Short-term Training	75	93
Basic Skills	75	128
GED	30	7/15*

**7 students had completed the GED program by December 3, 1992, and 8 other students were still enrolled in the program.*



Appendix

These questions are for discussion and are not suggested as a format for a written questionnaire.

I. Sample questions for use with union officers, stewards, and staff

1. What changes are taking place in the workplace?
 - Has new equipment or new technology been introduced?
 - Have work practices changed?
 - Have layoffs taken place?
 - Have old jobs been restructured
 - Have new jobs been created??
2. Are members troubled by new assignments?
 - Problems with new equipment?
 - Difficulty with job assignments?
 - Concern about increased reading, writing, or math?
 - Have they filed grievances over new job assignments, which may reflect the above problems?
3. Are workers aware of new job opportunities, and do they apply for the jobs?
Do new job openings have formal education requirements?
If so, do your members meet these requirements?
4. Do members attend local adult education programs?
 - Are they satisfied with the programs?
 - Have they dropped out of such programs?
5. Does the union, or employer, offer a tuition reimbursement program?
 - Do members use it?
 - What kinds of educational programs are they taking?
6. Do members understand the terms of their fringe benefits such as health, legal and education?
7. Do any government certification requirements affect members' jobs?
 - Will workers have to be tested?
 - Are they getting assistance to prepare for the tests?

II. Sample question for use in discussion with workers and union members:

1. What changes have you seen in your job?

What training are you getting to help you learn new job skills?

- Are there changes you would make in work practices that would help you perform your job?
- Does the equipment you use make your job easier?

2. Which of these basic educational skills do you use most in your work? Which ones do you use less often?

- Reading?
- Writing?
- Oral communication?
- Math?
- Problem-solving?
- Others?

3. What kinds of written materials do you use in your job?

- Procedures manuals?
- Inventory sheets?
- Operating instructions?
- Safety notices?
- Job descriptions?
- Employee benefits handbooks?
- Others?

4. What difficulties do you have when you use those written materials

- Hard to use?
- Written in complex or confusing language?
- Other specific problems?

5. What training have you been given to help you use these materials?

- Training in a classroom setting?
- Informal training by another worker?
- Other training?

6. Are the written qualifications for your job realistic, considering the work to be performed?

- Are further skills appropriate for doing the job?
- What problems do you encounter performing your work?
- Should the work be redesigned?(If so, in what way?)

7. What would help you perform your job better?
 - Different equipment?
 - Different work practices?
 - Education or training?
8. What additional skills would you need for job advancement?
 - How long have you worked in your current job?
 - What are the jobs to which you might advance (either with this employer or elsewhere)?
 - What new skills do those jobs require?
 - What training or education would help you acquire those skills?
9. What kinds of reading do you do?
 - Reading for pleasure?
 - Reading the newspaper?
 - Reading to your children or grandchildren?
10. Have you taken GED or adult education classes to improve your reading skills?
 - What did you like or dislike about that program?
 - Did you complete the program?
11. Are you interested in continuing your education?
 - What subjects interest you?
 - Would you like to complete your high school degree?
 - Take a college prep course? Enter a college degree program?
 - Take a specialized technical course?
 - Study for the citizenship exam?
 - Take other courses?
12. How would further education help you with your home and family responsibilities?
13. What additional services would make it easier for you to attend classes (child care etc.)?

III. Sample questions for use in discussions with supervisors

1. What general problems do workers have performing their jobs?
2. What training does the employer currently provide to address this?
3. What changes might help workers perform their jobs better?
 - More education and training?
 - New equipment?
 - Restructuring of the work process?

These questions have been adapted from *Worker-Centered Learning: A Union Guide to Workplace Literacy* published by the AFL-CIO Human Resources Development Institute, Washington, DC.

Project ELI

(Figure 1)

Monthly wage expense for Project ELI

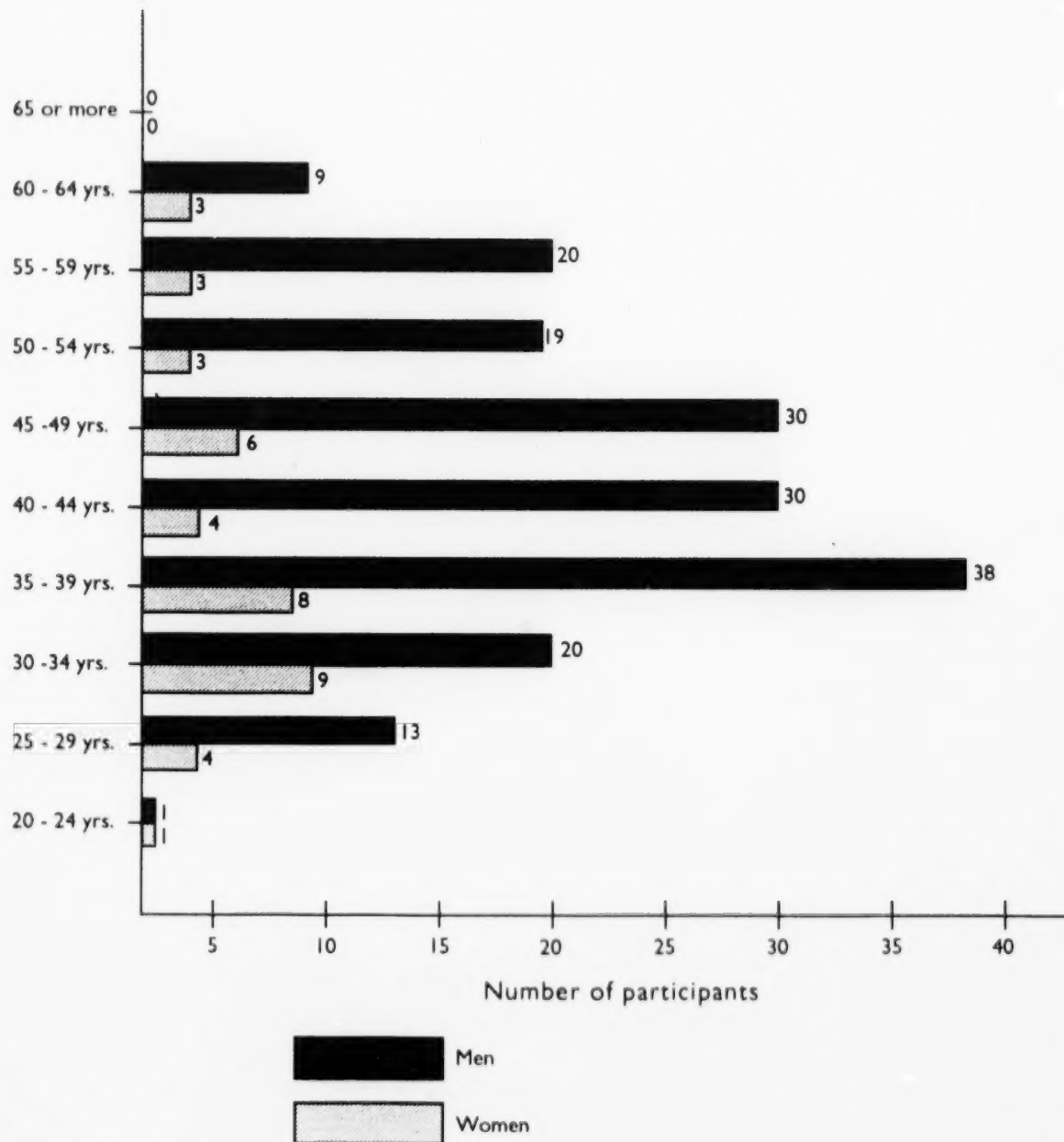
Month	Hours	Dollars
July 1991	165.75	\$2,070.47
August	311.25	3,740.15
September	833.25	10,001.34
October	207.00	2,412.74
November	426.25	5,059.30
December	428.00	5,159.00
January 1992	285.50	3,431.30
February	632.25	8,365.48
March	475.00	5,734.87
April	572.75	6,852.82
May	424.50	5,060.11
June	474.25	5,781.47
July	440.25	5,218.53
August	545.50	6,534.05
September	437.50	5,563.49
October	256.50	3,133.13
November	161.00	1,901.98
December	193.75	2,477.89
January 1993	296.57	3,558.84
February	152.78	1,833.35

APPROVED BUDGET	\$112,200.00
TOTAL PROJECT TO DATE	93,890.31
PROJECT BALANCE REMAINING	18,309.69

Project ELI

(Figure 2)

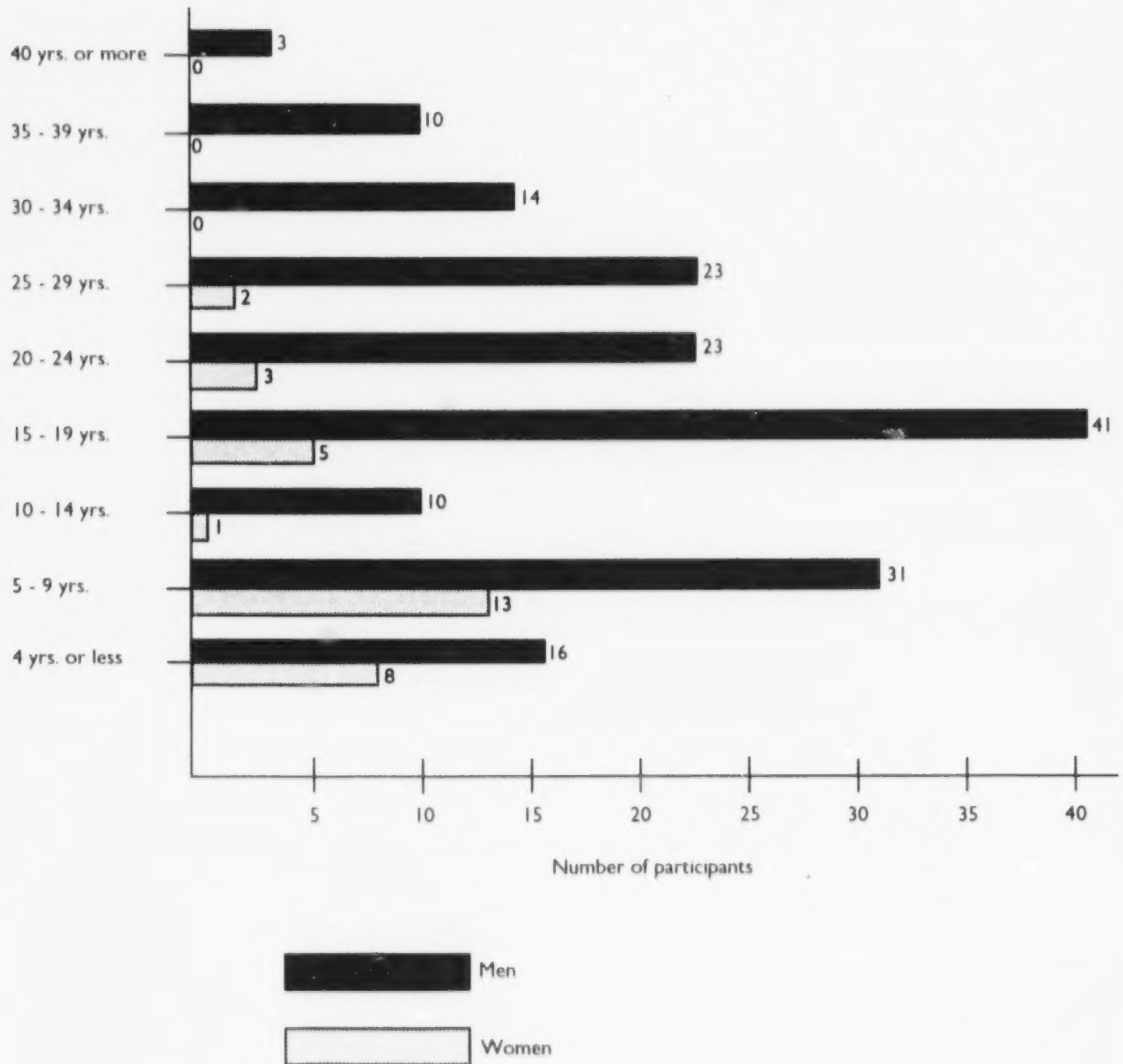
Participation by age



Project ELI

(Figure 3)

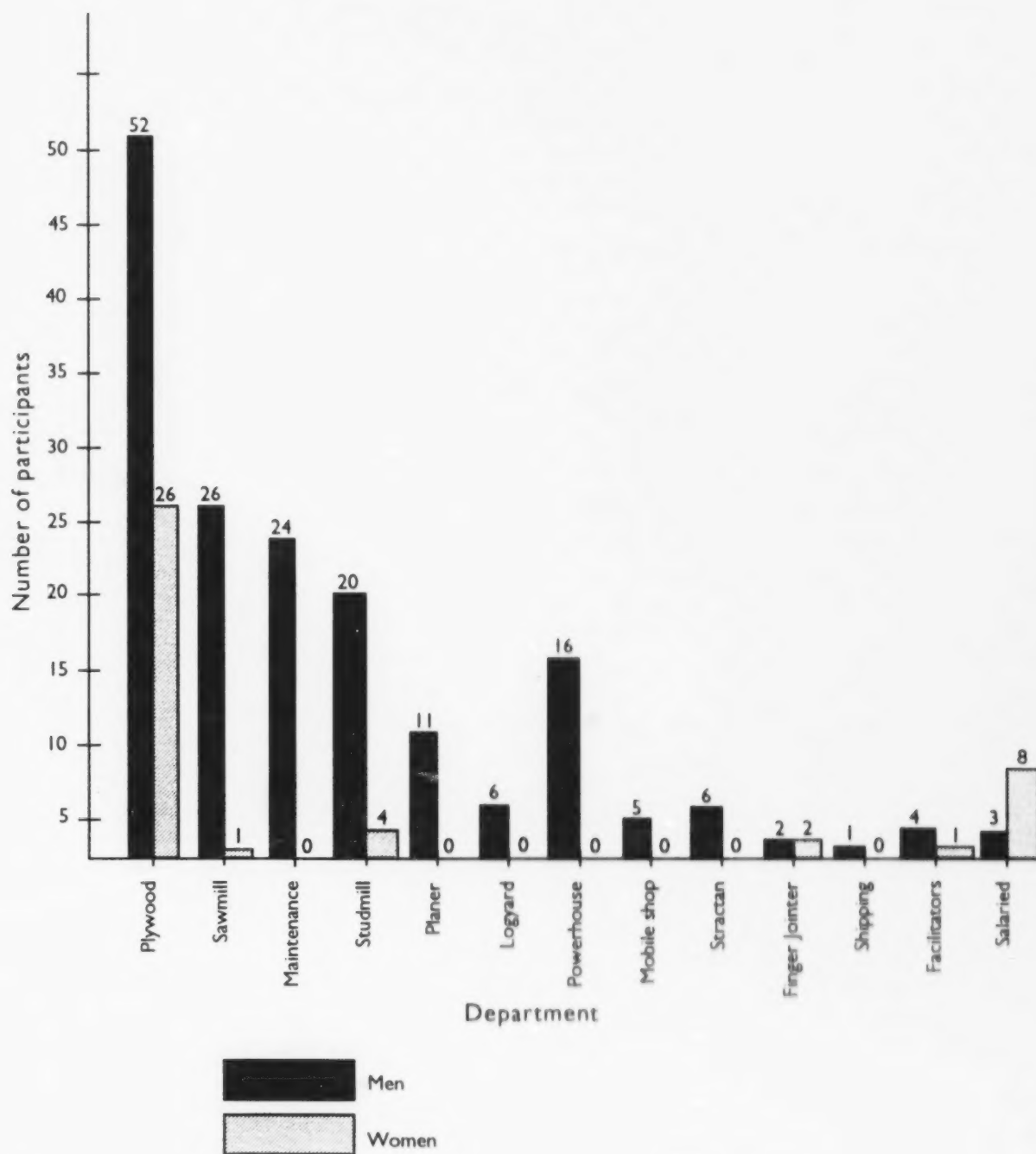
Participation by years of service



Project ELI

(Figure 4)

Participation by department



Project ELI

(Figure 5)

Student Contacts

